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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,967	07/28/2003	Jeffrey Allen Nielsen	200309751-1	6185
22879	7590	11/09/2006	EXAMINER	
HEWLETT PACKARD COMPANY P O BOX 272400, 3404 E. HARMONY ROAD INTELLECTUAL PROPERTY ADMINISTRATION FORT COLLINS, CO 80527-2400			RAO, G NAGESH	
			ART UNIT	PAPER NUMBER
			1722	

DATE MAILED: 11/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/628,967	<b>Applicant(s)</b> NIELSEN ET AL.	
	<b>Examiner</b> G. Nagesh Rao	<b>Art Unit</b> 1722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3-6,8,9,11-16,26 and 27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3-6, 8-9, 11-16, and 26-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Continued Examination Under 37 CFR 1.114***

1) A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/29/06 has been entered.

***Election/Restrictions***

2) Claims 17-25 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 7/29/05.

***Claim Rejections - 35 USC § 112***

3) Claim 27 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make

and/or use the invention. The language pertaining to a “printhead is in a staggered configuration” could not be located in the specification, and applicant’s never noted in the remarks where in the specification this limitation could be found.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
- 4) Claims 1, 3-6, 8-9, 11-16, and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt (US Patent No. 6,841,116).

Examiner would like to note that the current set of claims as were the previous sets of claims in application 10/628,967 were treated as apparatus claims. Examiner has noted the “system” claim language and taken into consideration, but the way the claims are drafted and in being able to give it broadest interpretation, examiner has and will continue viewing these claims as apparatus claims.

Schmidt 116 teaches a solid freeform fabrication apparatus as indicated by Figure 1, where the device shows a rail system that reads on as a printing carriage (18) that supports the printhead, curing, and planarizing/milling systems, a dispensing system capable of dispensing a variety of materials including a support material and build material stored in their own separate first and second compartments (49 and 50) before being dispensed by an ink-jet printing dispensing system (24) capable of being configured for uni or bi-directional printing onto a build platform (14), and a means for heating as well as curing as seen in Figure 1 by the heaters (25) and the UV radiation source (38) of the build material (Col 15 Lines 38-45), as well a planarizer (32) which reads on as a type of milling device for surface texturing the 3-dimensional object fabricated as well as aiding in the removal and streamlining of excess waste material capable of doing so for either support or build material waste removal, and a computer system (34 and 40) as a control system capable of operating the controls for the dispensing and curing

system. Examiner has noted new dependent claim 27 which although lacks enablement in the specification, can be denoted as being read upon by Schmidt 116 in Col 14 Lines 22-35, which discusses the potential for multiple printheads in alternative embodiments that could be used, each being dedicated to dispensing either or both of the materials (being build and support material) (Also See Col 12 Lines 34-68 , Col 13 Lines 40-55, and Col 14 Lines 22-35).

Schmidt 116 from the aforementioned pertains to a solid freeform fabrication device that is used for 3-dimensional prototyping.

Finally it is noted by the Examiner that applicants have amended their claims to cite the positions of where the printhead, milling, and curing systems are located with respect to the “printing carriage”. Examiner understands that Schmidt 116 does not have the exact configuration arrangement as noted by the applicants, however examiner does not see this as being an unobvious improvement into the state of the invention. This is viewed as a shifting the location of parts and does not preclude the functionality, configuration, nor capabilities for the prior art combination of Schmidt 1167 and Cohen 435 of being a novel and unobvious improvement in the current state of the art. Examiner points to *In re Japikse*, 181 F.2d 1019, 1023, 86 USPQ 70, 73 (CCPA 1950) and *In re Gazda*, 219 F.2d 449, 452, 104 USPQ 400, 402 (CCPA 1955) for further insight on the issue. Examiner

does not see it being an unobvious improvement to one having ordinary skill in the art at the time of the invention to shift location of parts.

5) Claims 1, 3-6, 8-9, 11-16, and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt (US Patent No. 6,841,116) in view of Cohen (US Patent No. 5,287,435).

From the aforementioned Schmidt 116 essentially teaches an apparatus almost identical to what is claimed by applicant, except for the specific location of parts. However examiner has also noted that Schmidt teaches a planarizer, but in an effort to strengthen the argument that the planarizer is an equivalent to a milling system, and for the matter that a milling system is commonly known and used in the art, examiner presents the teachings of Cohen 435.

Cohen 435 depicts a freeform fabrication apparatus system (See Figures 1 and 2 and Col 10 Lines 64-68 and Col 11 Lines 1-5). Where it is commonly taught to incorporate a type of milling system where there is a vacuum unit and cutter capable of trimming and evening the surface of the layered material deposited by the freeform fabrication apparatus, as well removing the excess waste material from portion machined by the milling system.

It would be obvious at the time of the invention to one with ordinary skill in the art to incorporate the teachings of Schmidt 116 with the teachings of Cohen 435 with respect to a milling system would benefit the apparatus of Schmidt 116 to aid in the fabrication and trimming of excess material for a more finished product.

***Response to Arguments***

6) Applicant's arguments filed 9/29/06 have been fully considered but they are not persuasive.

Examiner would like to point out that Schmidt 116 teaches not only a dispensing system adapted to separately dispense build material and support material by further pointing out in Col 12 Lines 65-68, Col 13 Lines 1-6, and Col 14 Lines 22-35, whereby the device taught by Schmidt 116 teaches alternative embodiments that include having the ink-jet printing head having a plurality of discharge orifices, or better yet "Alternatively, multiple print heads could be used, each being dedicated to dispensing either or both of the materials." Thus addressing applicant's argument that the dispensing system need be adapted to separately dispense the build and support material.



The issue of concern lies in how the apparatus dispenses the build and support material, more so as to when or how it achieves this deposition. As well when the apparatus achieves its preferred curing means. It is understood that Schmidt 116 teaches an apparatus capable of dispensing the build and support material separately, along with a curing means (i.e. the UV radiation source), beyond all the other prescribed elements.

Applicant's argument is understood that Schmidt 116 has its system dispense the build and support material in a manner different from how applicant dispenses their set of materials. This limitation as addressed in claim 1 is related more to a recitation of intended use. This language limitation pertains to operator's desire of dispensing which material when, utilizing the apparatus to their specified desire. Schmidt 116 or Schmidt 116 in combination with Cohen 435 teaches every prescribed element and/or provides motivation for such that is capable of performing said claimed prescribed means as claimed by applicant.

Examiner has noted that applicants never rebutted the argument about the planarizer being viewed as an equivalent to the milling system. The lack of an argument by the applicant is viewed as a noted admission that examiner's position was accurate in the arguments presented prior final rejection, and therefore that rejection is proper.

Examiner points out that applicants throughout the claims constantly refer to configurations of the device's system which are nothing more than operation parameters that recite the intended use or i.e. methods of operating the apparatus being claimed by the applicant. These limitations do not give weight to the physical structure of the apparatus.

Finally Examiner would like to point out that applicants have provided in the specification multiple embodiments as can be seen in Figures 3a-7b. These various embodiments depict various arrangements, location, and number of parts, but examiner is unable to determine whether there is a level of criticality with these alternative embodiments. Is there a critical nature/function for having these alternative embodiments, or are they all one in the same but depend on the operator's aesthetic desire? If these are truly critical, examiner would like to know why and where this substantive information can be located in the specification.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to G. Nagesh Rao whose telephone number is (571) 272-2946. The examiner can normally be reached on 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yogendra Gupta can be reached on (571)272-1316. The

fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GNR

  
**ROBERT DAVIS**  
**PRIMARY EXAMINER**  
**GROUP 1300-1746**  
11/8/06